

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

690 Walnut Ave. St. 150

Vallejo, CA 94592-1133

(707) 649-5453

(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001049**Date Inspected:** 20-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 1300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2330**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Sun Wei, Ye Yong Jun**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and Tower Mockup**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Joe Lanz arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China to periodically monitor welding and Quality Control (QC) functions during second shift. While on site the QA Inspector observed and/or discovered the following.

Bay 3**OBG Beams**

The QA Inspector randomly observed ZPMC welding personnel Li Meng Gian, ID# 05540 repair welding side plate SP040-01 stiffener welds. The welding was performed in the 2F (horizontal) position utilizing the self shielded flux cored arc welding (FCAW-S) process. The QA Inspector observed ZPMC QC Certified Welding Inspector Sun Wei monitoring the welding and the ZPMC QC inspector Li Peng Fei was verifying that the welding parameters of 270 amps, 28 volts and pre-heat were in accordance with the Welding Procedure Specification WPS-345-FCAW-1-Repair -1. The welding parameters and work observed by QA Inspector appear to meet the minimum requirements in accordance with the WPS and contract documents.

Bay 4**OBG Beams**

The QA inspector performed magnetic particle testing (MT) and visual inspection verification of plates BP010-01 to T stiffener fillet weld numbers 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 and 24. The welds were visually inspected by ZPMC QC inspector Xn Siam Ping. The welds were examined using magnetic particle testing for 10% of the weld length by ZPMC QC personnel Cai Xin Xin. The QA inspector performed visual inspection of the welds and they were examined using magnetic particle AC yoke for 10 % of the weld length and 50% of the weld terminations. The QA inspector did concur with the QC/NDT inspector's assessment. The work was

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completed on this date and the welds and inspections appear to meet the minimum requirements of the contract documents and AWS D1.5-96. A magnetic Particle Testing Report (TL-6028) for welds that were tested in accordance with AWS D1.5-96 and contract requirements was generated on this date.

The QA inspector periodically observed preheating of side plate stiffeners prior to welding by a ZPMC crew. The preheating was performed using electrical heating elements placed over the full length of the stiffeners. The heating elements were removed just prior to welding. The work appears to meet the minimum requirements of the contract documents.

Fillet) The QA Inspector randomly observed ZPMC welding personnel welding side plate SP047-01 stiffener 8mm fillet welds, weld joint #'s SP047-01-017 to SP-047-01-026. The welding was performed in the 2F (horizontal) position utilizing an automated self shielded flux cored arc welding (FCAW-S) process. The QA Inspector observed ZPMC QC Certified Welding Inspector Ye Yong Jun monitoring the welding and the ZPMC QC inspector Wu Ming Kai was verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification WPS-B-T-2132-3. Following is a list of welding personnel, weld numbers and welding parameters observed. The work observed by QA Inspector appears to meet the minimum requirements in accordance with the WPS and contract documents.

Plate SP047-01

Stiffener Weld	Welder	Average Amperage	Average Voltage	Travel speed
017	Li Shu Liang 308	29.3	446mm/min	
018	Li Shu Liang 311	27.9	446mm/min	
021	Xir Meng 291	30.7	446mm/min	
022	Xir Meng 289	29.8	446mm/min	
025	Li Zhan Gian 297	31.3	446mm/min	
026	Li Zhan Gian 294	29.4	446mm/min	

Bay 7

OBG Beams

The QA Inspector randomly observed ZPMC welding personnel Wang Chang Fa, ID #068102 tack welding temporary lifting devices on floor beam FB001-01 and FB001-02. The welding was performed in the 2F (horizontal) utilizing a shielded metal arc welding (SMAW) process with a 4.0mm diameter electrode, filler metal appeared to be E7018, brand name TL-508. The QA Inspector periodically observed the ZPMC QC Certified Welding Inspector Zhang Zhong monitoring the welding and the ZPMC QC inspector Wu Ming Kai was verifying that the welding parameters and the minimum pre-heat of 20 Centigrade were in accordance with the Welding Procedure Specification WPS-B-2113-F. The QA Inspector observed that the preheat and welding parameters measured by the QC Inspector appeared to be within the WPS ranges of 140 to 180 amps, 20 to 27 volts and 48 to 194mm per minuet travel speed. The welding parameters and work observed by QA Inspector appear to meet the minimum requirements in accordance with the WPS and contract documents.

The following digital photograph below illustrates observation of the activities being performed.

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Summary of Conversations:

At approximately 1830 hours, the QA inspector arrived at bay 7 to witness welding on floor beams. After witnessing the ZPMC QC inspector Wu Ming Kai verifying welding parameters and preheat, the QA inspector attempted to locate the ZPMC Certified Welding Inspector who is required to monitor the welding. The QA inspector asked the QC Inspector, Mr. Wang where the CWI was and he replied that he was in the office. After answering, Mr. Wang stepped away from the work area and made a phone call. A few minutes later the ZPMC Certified Welding Inspector Zhang Zhong arrived in bay 7.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Lanz,Joe	Quality Assurance Inspector
Reviewed By:	Cochran,Jim	QA Reviewer
